COLORADO PRELIMINARY[1] POPULATION FORECASTS

Colorado Division of Local Government

(June, 2003)

The population of **Colorado**, which is estimated at 4,512,400 for July 1, 2002, is expected to increase approximately 60,000 per year to reach 4,691,000 by (July 1,) 2005. The result would be an average annual growth rate of 1.6% for Colorado from 2000-2005. This is in contrast to an average annual growth rate of 2.8% which Colorado experienced in the 1990s. Colorado is expected to continue to grow at average annual rates starting at 1.8 and declining to 1.6% over the ensuing thirty-year period until reaching nearly 7,156,000 by 2030. This forecast reflects the current slowdown in Colorado's economy as well as incorporates new stronger forecasts for the National economy resulting in a lower 2005 Colorado forecast and a higher forecast for 2025.

[1] These sub-state projections, in addition to projections of employment and labor force, will be used as a **starting point** by the Demography Section working in conjunction with region and county agencies for the review and revision of these forecasts.

Methodology

State and county population projections have been produced by an economic-demographic projection system which models the relationship between demographic and economic change at the county, region, and state level. The procedures can be summarized as follows: A series of separate steps projects the supply and demand for labor in a region's economy for the projection period. The **supply** of labor is projected in two steps. A cohort-component model survives the resident population forward in time, based on specified fertility and mortality assumptions. Assumed age-sex specific labor force participation rates are then applied to this population to create the indigenous supply of labor. The **demand** for labor is projected by an econometrics model which relates the region's industrial structure to demand for that sector's output at the state and national level. Where demand for labor exceeds supply, equilibrium is restored by migrating people into the region. Where the supply exceeds demand, out-migration is assumed to occur. Thus, the amount of migration to or from a given region is determined by projected labor supply and demand at each period.

These projections are based on an economic forecast completed in May, 2003. Given the current economic slowdown in Colorado and the new stronger economic long-term forecast for the Nation these resulting population forecasts (2025) are somewhat higher than previous forecasts. The economic projections are prepared by the Center for Business and Economic Forecasting.

The population projections are prepared by single years of age for both males and females using a cohort-component model. As its name implies, a cohort-component model projects each component of population change separately (deaths, births, and migration) while maintaining the cohort (age-sex) detail of the population. In the first step of the basic operation of the model for each year, the number of people in each group is "survived" -- deaths are subtracted -- to the next year and the next age group. For example, 0 year olds in year 1 become 1 year olds in year 2, and 1 year olds become 2, etc.. Fertility rates are then applied to the women of child-bearing age (15 - 49) to produce a new birth cohort for the year. Age-sex specific labor force participation rates are applied to the population 16 and over to estimate the total labor force provided by the existing population. Finally, migrants are added or subtracted from each age-sex group to achieve a population sufficient to supply a labor force demanded by the economic forecast.

The data requirements for running the demographic model are: A) survival rates by age and sex, B) fertility rates for women 15 - 49, C) the age-sex distribution of migrants, D) base year population disaggregated by age and sex, E) the age and sex of special populations of military, prisoners, college students, and temporary ski-employee population, and F) labor force participation rates by age and sex. The model allows for changes in survival, fertility, and labor force participation rates as well as migration rates and amounts over time. The specific data and assumptions used in running the model for these projections are described in a monograph entitled, "A Description of the Colorado Economic-Demographic Modeling System" prepared by the Demographic Section of the Colorado Division of Local Government. Questions about particular aspects of the model or the data and assumptions used in running the model should be addressed to Cindy DeGroen or Jim Westkott (866-2156).

This population projection model can be run for any age group or combination of age groups, and for any county or region or combination of counties to any year up to 2030. The data is available by age by county on the internet at http://www.dola.colorado.gov/demog/demog.htm.